

USFS BIG HANK EAST CAMPGROUND (PWSNO 1400059) SOURCE WATER ASSESSMENT Final REPORT

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State of Idaho Department of Environmental Quality

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SOURCE WATER ASSESSMENT FOR USFS BIG HANK EAST CAMPGROUND

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For transient water systems like USFS Big Hank East Campground, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for USFS Big Hank East Campground* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics and potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for USFS Big Hank East Campground is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction. The USFS Big Hank East Campground well provides drinking water for a campground located on the northern end of the North Fork of the Coeur d'Alene River, 7 miles northwest of Devil's Elbow Campground. The campground is located approximately 20 miles north of Prichard. The well has a hand pump. It was drilled in August of 1980 to a depth of 90 feet and produces about 0.5 gallons per minute. The 6-inch steel well casing extends from 24 inches above grade to 26 feet below the surface where it terminates in shale. Except for a minor deviation in casing thickness, the casing meets Idaho Safe Drinking Water Standards. An 18-foot deep surface seal extends through 16 feet of gravel and 2 feet of clay to terminate in shale. The surface seal material consists of puddling clay and well cuttings. The static water level is 10 feet below ground.

Well Site Characteristics. The North Fork of the Coeur d'Alene River crosses through the delineated recharge zone. A tributary enters the river downstream from the well and in the southern portion of the zone. The land on the well side of the river is relatively flat while the land on the other side of the river, which is the southwest corner of the recharge zone, consists of a steep hillside. Three dirt Forest Service roads enter the recharge zone and the main road crosses the river by way of a bridge located in the southeast corner. Big Hank Meadow also stretches into the southeast portion of the recharge zone. Upper Big Hank Campground and its well are located in the northern fringe of the zone. The soils in the 1000-foot radius delineated around the USFS Big Hank East Campground are considered to be moderately well drained to well drained. At the well site, gravel predominates the first 16 feet of depth. The remaining 74 feet are shale.

Potential Contaminant Inventory. The potential sources for contamination in the recharge zone are the dirt roads, the two campgrounds and the contaminants their guests might bring, vaulted toilets, the river and the tributary. The well is about 200' from the river and appears to be located outside of the flood-zone. The well is also located about 425' from the road.

Water Quality History. Baseline testing of the well the month after it was drilled showed the presence of Iron that exceeded the Maximum Contaminant Level (MCL). In 1981, three out of six bacteriological tests were positive. Since 1982, nearly 120 tests have been conducted with 3 tests resulting in a "positive" result. The most recent positive result was logged in 1991. Nitrate levels have been between non-detected and 0.039 mg/l. The MCL for Nitrate is 10.0 mg/l. The presence of any amount of a regulated volatile organic compound in a sample from a well usually results in a high susceptibility ranking. In this case however, the amounts of chemicals in the water and the date when the sample was drawn suggest that the contaminants were either introduced during construction or they are not present in notable levels in the ground water itself.

Susceptibility to Contamination. The USFS Big Hank East Campground well ranked moderately susceptible to all classes of regulated contaminants. Hydrologic sensitivity factors related to local geology added the most points to the final susceptibility scores. The susceptibility analysis worksheet on page 5 of this report shows how the well was scored. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

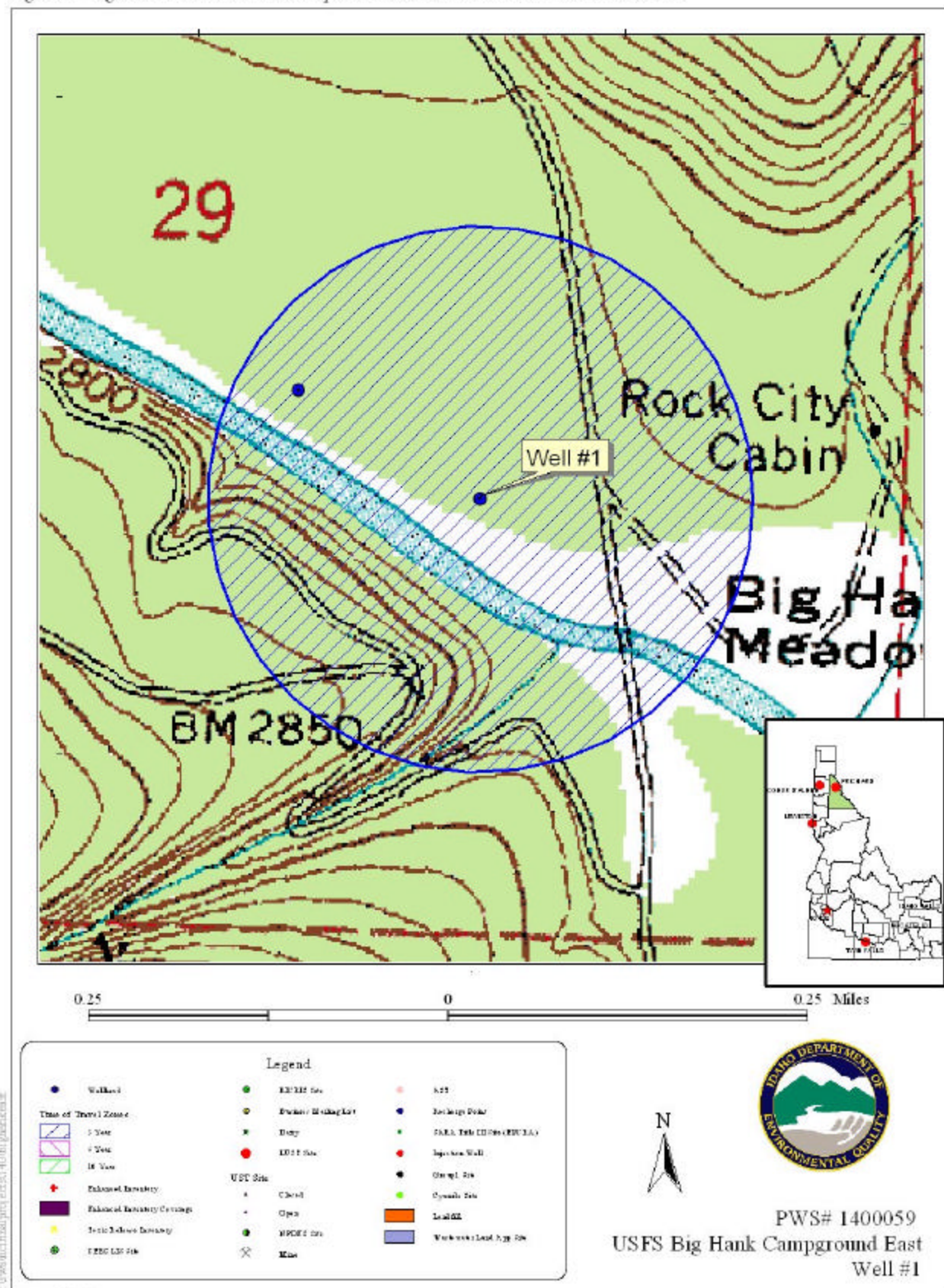
Source Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

The USFS Big Hank East Campground water system was in good condition and it was in compliance with the *Idaho Rules for Public Drinking Water Systems* when it was inspected in 2000. The well is tested monthly instead of the required quarterly testing during the operating system. Continuing to operate and maintain the system as it has been in the past should ensure continuation of good water quality for the campground.

In July of 2000, the following deficiencies were identified in a Sanitary Survey; replace the gasket between the reservoir and fountain, tighten or replace the packing nut, paint hand pump and well casing, install a pump shroud and replace the concrete slab. Those repairs should be resolved if they haven't already been remedied. Additionally, protection efforts should include signage to keep vehicles away from the well site and its recharge zone. Signage might read "Drinking Water Protection Area, Keep Vehicles, Pets and ALL Chemicals Away."

For assistance in developing source water protection strategies please contact Dan Remmick at the Coeur d'Alene Regional DEQ office at 208 769-1422.

Figure 1. Big Hank East Delineation Map and Potential Contaminant Source Locations



Ground Water Susceptibility

Public Water System Name :

USFS BIG HANK CAMPGROUND EAST

Well# :

WELL #1

Public Water System Number :

1400059

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1. System Construction		SCORE			
Drill Date	8/12/80				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2000				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		2			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		6			
3. Potential Contaminant / Land Use – ZONE 1A		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use – ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	2
(Score = # Sources X 2) 8 Points Maximum		2	2	2	4
Sources of Class II or III leachable contaminants or Microbials	YES	1	1	1	
4 Points Maximum		1	1	1	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		3	3	3	4
Cumulative Potential Contaminant / Land Use Score		3	3	3	4
4. Final Susceptibility Source Score		9	9	9	10
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

- 0 - 5 Low Susceptibility
 6 - 12 Moderate Susceptibility
 > 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.